SEMINOLE COUNTY
FLORIDA'S NATURAL CHOICE

presentation to:
US 17/92 RPA

Stormwater Master Plan Update
June 4, 2015

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cph SAI

CRA Limits

Project Approach

overall approach

PHASE I:

Data Collection/Research
Public/Stakeholder Coordination
GIS
H&H / Water Quality Modeling

Existing Conditions Level of Service

PHASE II:

Public/Stakeholder Coordination
Planning/Growth Strategies
H&H / Water Quality Modeling
Cost Estimation (Construction)
Permit Pre-App
Water Quality
ROW Analysis/Estimation
GIS Asset Management
Preliminary Utility Review
Funding Analysis

Stormwater Master Plan/CIP

PHASE III:

Design and Permitting
ROW/Easement Acquisition
Public/Stakeholder Coordination

Construction

CRA with Drainage Boundary

275 ERP's within Corridor

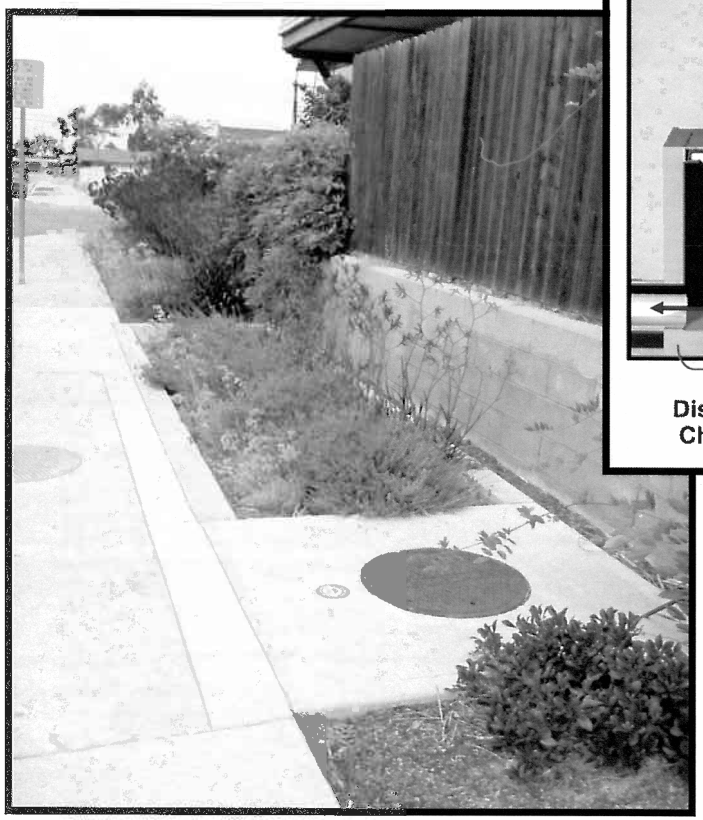
LIDAR Coverage

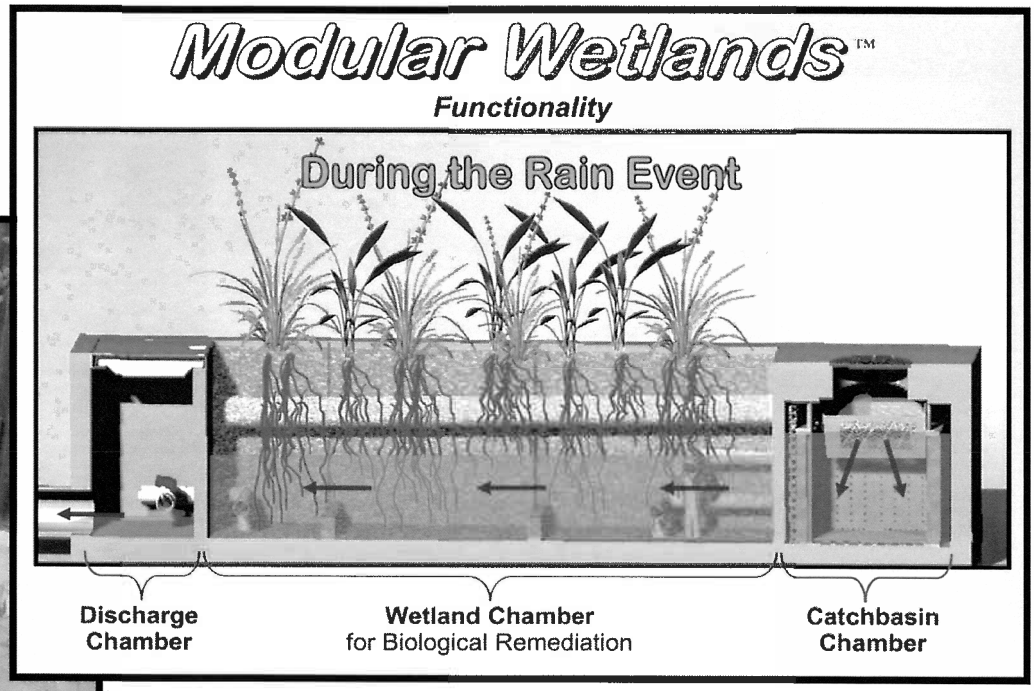
Data Collection

INDEX	ID	TYPE	NAME	DATE	AUTHOR	ERP PERMIT #	SEQ #	ORIGINAL FILE NAME	SOURCE	RECEIVE_DATE	FILE PA
1001	CRA_1001_MI	MI	FEMA FIRM Map No. 12117C0060F	09/28/07	FEMA			12117C0060F	FEMA	04/08/15	CRA_1001 f
1002	CRA_1002_MI	MI	FEMA FIRM Map No. 12117C0065F	09/28/07	FEMA			12117C0065F	FEMA	04/08/15	CRA_1002 f
1003	CRA_1003_MI	MI	FEMA FIRM Map No. 12117C0070F	09/28/07	FEMA			12117C0070F	FEMA	04/08/15	CRA_1003 f
1004	CRA_1004_MI	MI	FEMA FIRM Map No. 12117C0135F	09/28/07	FEMA			12117C0135F	FEMA	04/08/15	CRA_1004 f
1005	CRA_1005_MI	MI	FEMA FIRM Map No. 12117C0155F	09/28/07	FEMA			12117C0155F	FEMA	04/08/15	CRA_1005 f
1006	CRA_1006_MI	MI	FEMA FIRM Map No. 12117C0160F	09/28/07	FEMA			12117C0160F	FEMA	04/08/15	CRA_1006 f
1007	CRA_1007_MI	MI	FEMA FIRM Map No. 12117C0165F	09/28/07	FEMA			12117C0165F	FEMA	04/08/15	CRA_1007 f
1008	CRA_1008_MI	MI	FEMA FIRM Map No. 12117C0170F	09/28/07	FEMA			12117C0170F	FEMA	04/08/15	CRA_1008 f
1009	CRA_1009_MI	MI	FEMA FIRM Map No. 12117C0255F	09/28/07	FEMA			12117C0255F	FEMA	04/08/15	CRA_1009 f
1010	CRA_1010_PHO	PHO	Seminole County Aerials 2012	01/01/12	FDOT			RasterCatalog	FDOT	04/08/15	CRA_1010 f
1011	CRA_1011_GIS	GIS	NRCS Soils for Seminole County (Most current: 09/21/2014) (Selection set	09/21/14	USDA NRCS			SC_HydroGroup_Selection	USDA NRCS	04/30/15	CRA_1011 (
1012	CRA_1012_GIS	GIS	National Wetlands Inventory (Most current: 10/06/2014) (Selection set to	10/06/14	FWS NWI			FL_Wetlands_Selection	NWI	04/30/15	CRA_1012 (
1013	CRA_1013_GIS	GIS	Seminole County Stormwater Infrastructure GIS		Seminole County			EconBasin	Seminole County	05/16/13	CRA_1013 (
1014	CRA_1014_MI	MI	Seminole County Stormwater Infrastructure Photos		Seminole County			PW	Seminole County	11/18/13	CRA_1014 f
1015	CRA_1015_GIS	GIS	USGS Stream Gages NHD Location 2014	01/01/14	NHD			gagesII_9322_sept30_2011	USGS	03/16/15	CRA_1015 (
1016	CRA_1016_GIS	GIS	USGS Stream Gages NHD Location and properties	01/01/10	NHD			USGS_Streamgages-NHD_Location:	USGS	03/16/15	CRA_1016 (
1017	CRA_1017_GIS	GIS	Hydrography		NHD			NHDH_FL	USGS	04/01/15	CRA_1017 (
1018	CRA_1018_GIS	GIS	Watershed Boundaries		Seminole County			DrainageBasins	Seminole County	05/16/13	CRA_1018 (
1019	CRA_1019_GIS	GIS	Seminole County Parcels	04/24/15	Seminole County			Parcels	Seminole County	04/29/15	CRA_1019 (
1020	CRA_1020_GIS	GIS	City Limits within Seminole County (Political Boundaries)	04/30/15	Seminole County			CityLimits	Seminole County	04/30/15	CRA_1020 (
1021	CRA_1021_GIS	GIS	Seminole County Streets (Roads)	04/24/15	Seminole County			streets.gdb	Seminole County	05/01/15	CRA_1021 (
1022	CRA_1022_GIS	GIS	SJRWMD Landcover Landuse 2009 (Selection set to Project Study Area)	03/02/12	SJRWMD			LCLU2009_SJRWMD_Selection	Seminole County	04/30/15	CRA_1022 (
1023	CRA_1023_GIS	GIS	17/92 CRA Corridor	01/01/14				CRA_Plan		04/08/15	CRA_1023 (
1024	CRA_1024_GIS	GIS	SJRWMD ERP Polygons		SJRWMD			erp_bnd	SJRWMD	03/27/15	CRA_1024 (
1025	CRA_1025_GIS	GIS	Seminole County Boundary		Seminole County			bndry	Seminole County	12/01/03	CRA_1025 (
1026	CRA_1026_MI	MI	Hourly Gage Data Station No. 02234384	10/01/07	USGS			02234384_20150401145234	USGS	04/08/15	CRA_1026 f
1027	CRA_1027_MI	MI	Hourly Gage Data Station No. 02234400	10/01/07	USGS			02234400_20150401145507	USGS	04/08/15	CRA_1027 f
1028	CRA_1028_CP	CP	Porsche of North Orlando	10/02/07	Lochrane Consulting Engineers & Surveyors	79606	1	EREG_188325	SJRWMD	04/08/15	CRA_1028 (
1029	CRA_1029_CP	CP	Veterinary specialist Center	07/23/03	Professional Engineers Consultants, Inc.	64645	2	EREG_433828	SJRWMD	04/08/15	CRA_1029 (
1030	CRA_1030_CP	CP	Veterinary specialist Center - 1,000 S.F. Building	10/18/05	McCree Architects and Engineers,Inc.	64645	3	EREG_804987	SJRWMD	04/08/15	CRA_1030 (
1031	CRA_1031_CP	CP	State Road No. 15/600 (U.S. 17/92) - Financial Project ID 240160-1-52-01 -	09/21/00	Michael Baker JR.,Inc.	68031	1	EREG_559749	SJRWMD	04/08/15	CRA_1031 (
1032	CRA_1032_CP	CP	Spartan Retail & Office	11/06/07	HB Associates, LLC	116430	1	EREG_1276892	SJRWMD	04/09/15	CRA_1032 (
1033	CRA_1033_CP	CP	DPT Facility	04/22/93	DPC Engineering & Development Services, Inc.	49466	1	EREG_310520	SJRWMD	04/09/15	CRA_1033 (
1034	CRA_1034_CP	CP	Hickman Property	03/28/03	Lochrane Engineering, Inc.	79606	3	EREG_806081	SJRWMD	04/09/15	CRA_1034 (
1035	CRA_1035_CP	CP	Distributed Processing Technology	11/12/96	Frith & Associates, Inc.	49466	2	EREG_805130	SJRWMD	04/09/15	CRA_1035 (
1036	CRA_1036_CP	CP	Maitland Executive Village Office Park	06/02/04	DAO Consultants, Inc.	96041	1	EREG_931147	SJRWMD	04/09/15	CRA_1036 (
1037	CRA_1037_CP	CP	School of Perf. Arts	05/25/95	Harling Locklin & Associates Inc	49629	1	EREG_928095	SJRWMD	04/09/15	CRA_1037 (
1038	CRA_1038_CP	CP	Construction Plans for WALGREEEN No. 07298, Lake of Woods Blv. And US .	05/13/03	Kelly, Collins & Gentry, Inc.	8626	3	EREG_558732	SJRWMD	04/09/15	CRA_1038 (

Design Alternatives

BMP's – Modular Wetlands

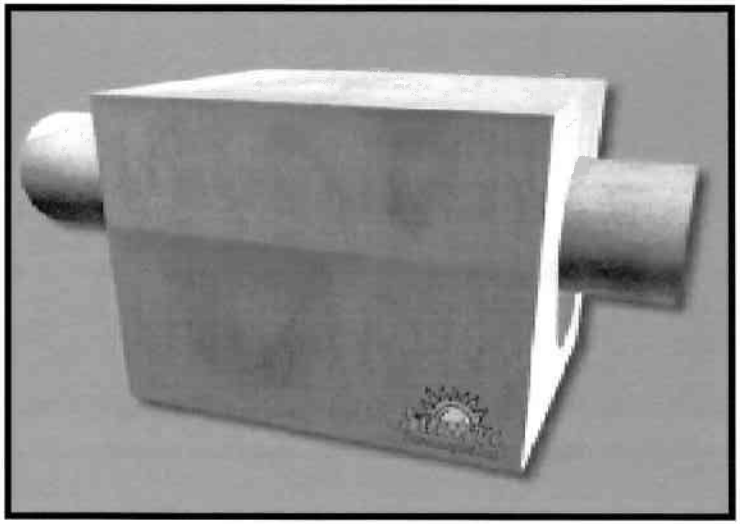


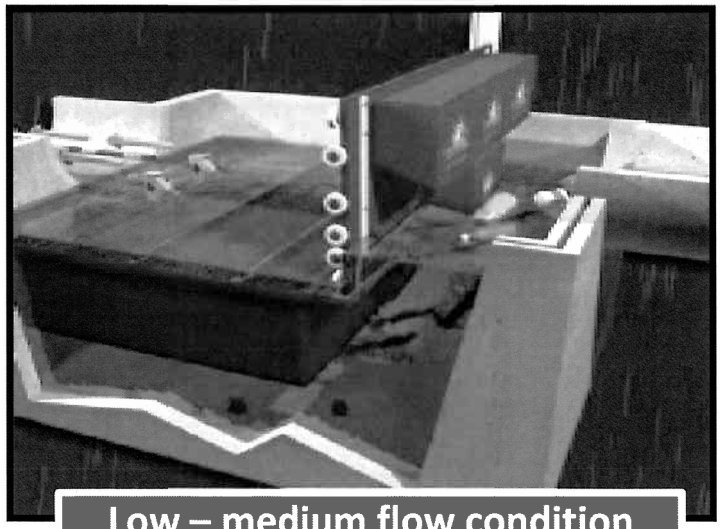


- Functional and aesthetic
- Plant species are optional
- Limited flow rates

Design Alternatives

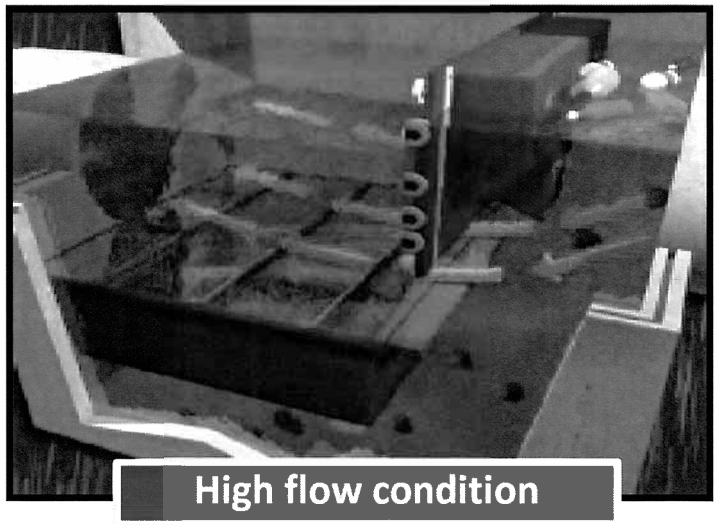
BMP's – Skimboss™/ Filter Media





Low – medium flow condition

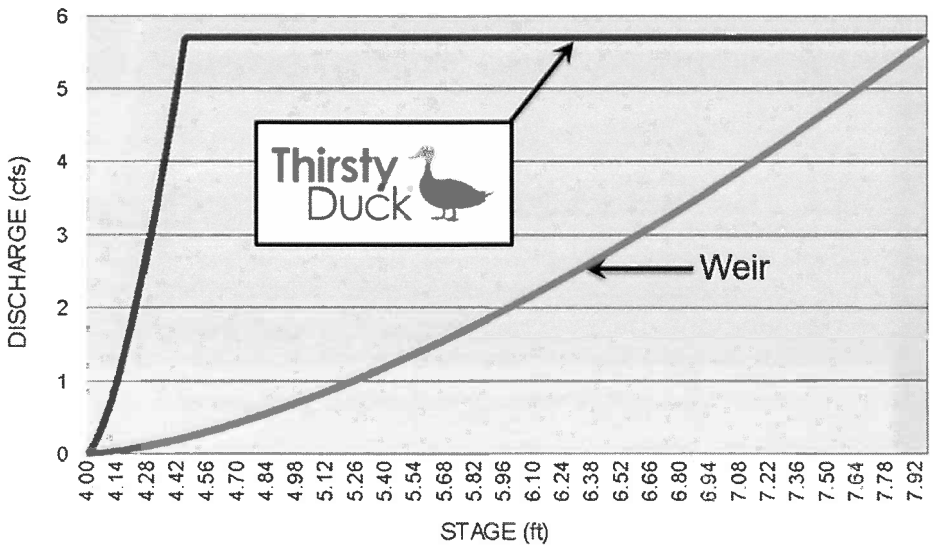
- Skimboss™ with upflow filter
- UCF's BOLD & GOLD™ media
- High efficiency
- High flow bypass capability

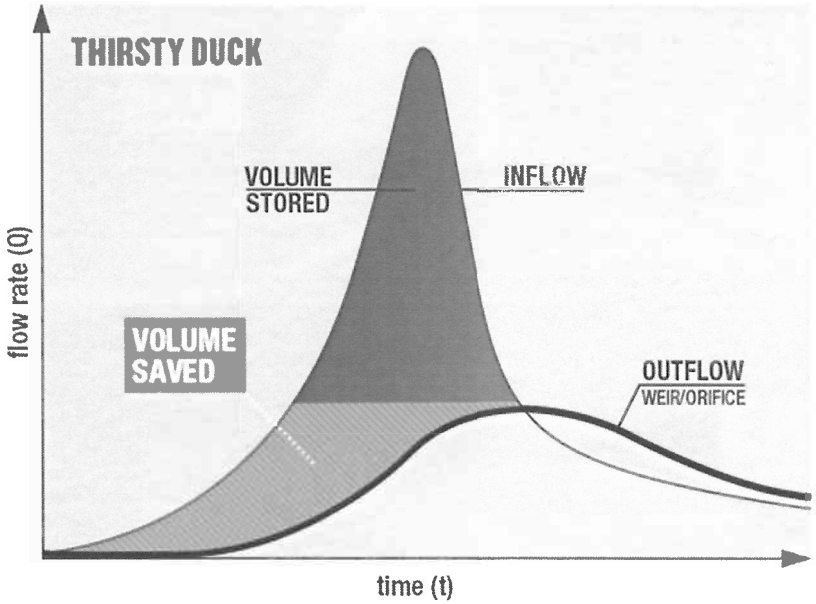


High flow condition

Design Alternatives

BMP's – Thirsty Duck

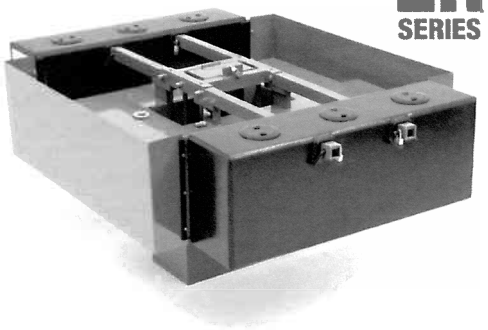




- Floating riser w/ skimmer/orifice
- Provides constant discharge
- Reduces required attenuation volume
- Increases treatment volume

TD SERIES

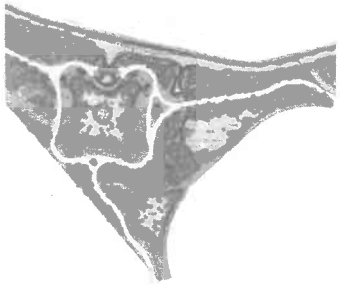
ER SERIES

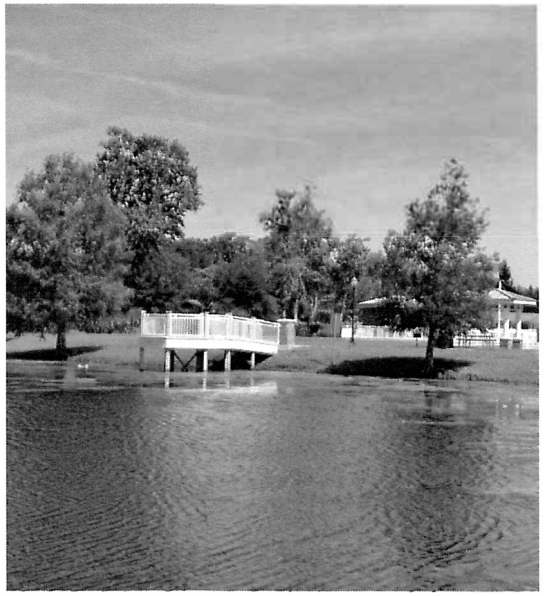


Design Alternatives

- Beautification Opportunities
- Stormwater Feature Amenities
- Xeriscape Planting
- Education Opportunities

Corridor Enhancements





Conceptual Project #1

Small Scale Project

1 Acre of Development
70% Maximum Impervious Area
20% Land Area Needed for Stormwater Pond (0.25 is 20% of 1.25 Ac)

Item	Qty	Unit	$/Unit	Extension	Notes
Land Acquisition and Easements	0.25	AC	$ 400,000	$ 100,000	
Earthwork and Grading	1309	CY	$ 10	$ 13,095	Assumed (Treatment Volume + PPV)*2
Stormwater Piping (18")	230	LF	$ 64	$ 14,720	Q=CiA (Assumed 18" Min Pipe)
Stormwater Structure	3	EA	$ 3,500	$ 10,500	Assuming two structures offsite and MES in pond
Stormwater Outfall Structure and Piping	1	EA	$ 4,500	$ 4,500	
Sodding	605	SY	$ 2	$ 1,325	Assumed 50% of Pond Area (Small Pond)
Clearing and Grubbing	0.25	AC	$ 9,000	$ 2,250	
Erosion Control	1	LS	$ 2,500	$ 2,500	
Mobilization	1	LS	$ 5,000	$ 5,000	10% of other pay items
			Subtotal	$ 53,889	
			Contingency (40%)	$ 21,555.79	Small Project
			Survey/Geo/Design/Permitting/Bidding (25%)	$ 13,472.37	Small Project
			Design/Const Total	$ 88,918	
			Project Total	**$ 188,918**	

Conceptual Project #2

Small-Medium Scale Project

2 Acre of Development
70% Maximum Impervious Area
20% Land Area Needed for Stormwater Pond (0.5 is 20% of 2.5 Acres)

	Qty	Unit	$/Unit	Extension	
Land Acquisition and Easements	0.5	AC	$ 400,000	$ 200,000	
Earthwork and Grading	2587	CY	$ 10	$ 25,866	Assumed (Treatment Volume + PPV)*2
Stormwater Piping (18")	230	LF	$ 64	$ 14,720	Q=CiA (1 Acre Drainage)
Stormwater Piping (24")	230	LF	$ 71	$ 16,330	Q=CiA (2 Acre Drainage)
Stormwater Structure	4	EA	$ 4,500	$ 18,000	Assuming three structures offsite and MES in pond
Stormwater Outfall Structure and Piping	1	EA	$ 7,500	$ 7,500	
Sodding	1210	SY	$ 2	$ 2,650	Assumed 50% of Pond Area (Small Pond)
Clearing and Grubbing	0.5	AC	$ 9,000	$ 4,500	
Erosion Control	1	LS	$ 3,500	$ 3,500	
Mobilization	1	LS	$ 9,500	$ 9,500	10% of other pay items
			Subtotal	$ 102,566	
			Contingency (25%)	$ 25,641.57	Small-Medium Project
			Survey/Geo/Design/Permitting/Bidding (25%)	$ 25,641.57	Small-Medium Project
			Design/Const Total	$ 153,849	
			Project Total	**$ 353,849**	

Conceptual Project #3

Small-Medium Scale Project

10 Acre of Development
70% Maximum Impervious Area
20% Land Area Needed for Stormwater Pond (2.5 Ac is 20% of 12.5 Acres)

	Qty	Unit	$/Unit	Extension	
Land Acquisition and Easements	2.5	AC	$ 400,000	$ 1,000,000	
Earthwork and Grading	12966	CY	$ 10	$ 129,658	Assumed (Treatment Volume + PPV)*2
Stormwater Piping (18")	200	LF	$ 64	$ 12,800	Q=CiA (1 Acre Drainage)
Stormwater Piping (24")	200	LF	$ 71	$ 14,200	Q=CiA (2 Acre Drainage)
Stormwater Piping (36")	200	LF	$ 92	$ 18,400	Q=CiA (5 Acre Drainage)
Stormwater Piping (42")	75	LF	$ 105	$ 7,875	Q=CiA (10 Acre Drainage)
Stormwater Structure	5	EA	$ 4,500	$ 22,500	Assuming four structures offsite and MES in pond
Stormwater Outfall Structure and Piping	1	EA	$ 10,000	$ 10,000	
Sodding	2420	SY	$ 2	$ 5,300	Assumed 20% of Pond Area
Clearing and Grubbing	2.5	AC	$ 8,000	$ 20,000	
Erosion Control	1	LS	$ 7,500	$ 7,500	
Mobilization	1	LS	$ 9,500	$ 9,500	10% of other pay items
			Subtotal	$ 257,733	
			Contingency (25%)	$ 51,546.60	Small-Medium Project
			Survey/Geo/Design/Permitting/Bidding (25%)	$ 64,433.26	Small-Medium Project
			Design/Const Total	$ 373,713	
			Project Total	**$ 1,373,713**	